

# Aggregate Demand and Aggregate Supply

Chapter 29 introduces another macro model of the economy, one based on aggregate demand and aggregate supply. This model can be used to explain real domestic output and the level of prices at any point in time and to understand what causes output and the price level to change.

The **aggregate demand (AD) curve** is downsloping because of the real-balances, interest rate, and foreign purchases effects resulting from changes in the price level. With a downsloping aggregate demand curve, changes in the price level have an inverse effect on the level of spending by domestic consumers, businesses, government, and foreign buyers, and thus on real domestic output, assuming *other things equal*. This change would be equivalent to a movement along an existing aggregate demand curve. A lower price level increases the quantity of real domestic output demanded, and a higher price level decreases the quantity of real domestic output demanded.

The aggregate demand curve can increase or decrease because of a change in one of the nonprice level **determinants of aggregate demand**. The determinants include changes affecting consumer, investment, government, and net export spending. You will learn that underlying each demand determinant are various factors that cause the determinant to change. The size of the change involves two components. For example, if one of these spending determinants increases, then aggregate demand will increase. The change in aggregate demand involves an increase in initial spending plus a multiplier effect that results in a greater change in aggregate demand than the initial change.

The **aggregate supply (AS) curve** shows the relationship between the output of producers and the price level, but it varies based on the time horizon and variability of input and output prices. In the immediate short run, the aggregate supply curve is horizontal at one price level because input prices and output prices are inflexible or fixed. In the short run, however, the upsloping shape of the aggregate supply curve reflects what happens to per-unit production costs as real domestic output increases or decreases. In the long run, the aggregate supply curve is vertical because input and output prices are fully flexible, so a change in the price level does not change resource utilization at the full-employment level of output.

You should remember that an assumption has also been made that other things are equal when one moves along an aggregate supply curve. When other things change, the short-run aggregate supply curve can shift.

The **determinants of aggregate supply** include changes in input prices, changes in productivity, and changes in the legal and institutional environment for production. As with aggregate demand, you will learn that there are underlying factors that cause these supply determinants to change.

The intersection of the aggregate demand and aggregate supply curves determines **equilibrium real output** and the **equilibrium price level**. Assuming that the determinants of aggregate demand and aggregate supply do not change, there are pressures that will tend to keep the economy at equilibrium. If a determinant changes, then aggregate demand, aggregate supply, or both, can shift.

When aggregate demand increases, this will lead to changes in equilibrium real output and the price level. If the economy is operating at full employment, the increase in AD may not have its full multiplier effect on the real GDP of the economy, and it will result in **demand-pull inflation**. There can also be a decrease in aggregate demand, but it may reduce output and not the price level. In this case, there can be downward price inflexibility for several reasons, as you will learn in the chapter.

Aggregate supply may increase or decrease. An increase in aggregate supply gives a double bonus for the economy because the price level falls, and output and employment increase. Conversely, a decrease in aggregate supply doubly harms the economy because the price level increases, and output and employment fall, and thus the economy experiences **cost-push inflation**.

The aggregate demand–aggregate supply model is an important framework for determining the equilibrium level of real domestic output and prices in an economy. The model will be used extensively throughout our remaining macroeconomics discussion to analyze how different parts of the economy function.

## CHECKLIST

When you have studied this chapter you should be able to

- ☐ Define aggregate demand.
- ☐ Describe the characteristics of the aggregate demand curve.
- ☐ Use the real-balances, interest-rate, and foreign purchases effects to explain why the aggregate demand curve slopes downward.
- ☐ Use a graph to distinguish between a movement along a fixed aggregate demand curve and a shift in aggregate demand.

- Give an example of the effect of the multiplier on an increase in aggregate demand.
- Explain the four factors that can change the consumer spending determinant of aggregate demand.
- Explain the two factors that can change the investment spending determinant of aggregate demand.
- Explain what changes the government spending determinant of aggregate demand.
- Explain the two factors that can cause changes in the net export spending determinant of aggregate demand.
- Discuss how the four major spending determinants of aggregate demand (and their underlying factors) can increase or decrease aggregate demand.
- Define aggregate supply in the immediate short run, the short run, and the long run.
- Explain why the aggregate supply curve in the immediate short run is horizontal.
- Explain why the aggregate supply curve in the short run is upsloping.
- Explain why the aggregate supply curve in the long run is vertical.
- Identify the three major spending determinants of aggregate supply.
- Describe two factors that change the input prices determinant of aggregate supply.
- Explain what changes the productivity determinant of aggregate supply.
- Identify two factors that change the legal-institutional environment determinant of aggregate supply.
- Explain how the three major determinants of aggregate supply (and their underlying factors) can increase or decrease aggregate supply.
- Explain why in equilibrium the economy will produce a particular combination of real output and the price level rather than another combination.
- Show the effects of an increase in aggregate demand on the real output and the price level and relate the changes to demand-pull inflation.
- Illustrate the effects of a decrease in aggregate demand on real output and the price level in the economy and relate the changes to recession and unemployment.
- Explain the meaning of the terms deflation and disinflation.
- Give five reasons for downward inflexibility of changes in the price level when aggregate demand decreases.
- Explain the effects of a decrease in aggregate supply on real output and the price level and relate the changes to cost-push inflation.
- Describe the effects of an increase in aggregate supply on real output and the price level.
- Explain how increases in productivity reduce inflationary pressures using an aggregate demand–aggregate supply graph.
- Explain why increases in oil prices have lost their strong effect on core inflation and the U.S. economy. (Last Word).

## CHAPTER OUTLINE

1. This chapter introduces the **aggregate demand–aggregate supply model** (AD–AS model). It explains why real domestic output and the price level fluctuate

in the economy. The chapter begins by explaining the meaning and characteristics of aggregate demand.

a. **Aggregate demand** is a curve that shows the total quantity of goods and services (real output) that will be purchased (demanded) at different price levels. With aggregate demand there is an inverse or negative relationship between the amount of real output demanded and the price level, so the curve slopes downward.

b. Three reasons account for the inverse relationship between real output and the price level, and the downward slope of the aggregate demand curve.

(1) **Real-balances effect:** An increase in the price level decreases the purchasing power of financial assets with a fixed money value, and because those who own such assets are now poorer, they spend less for goods and services. A decrease in the price level has the opposite effects.

(2) **Interest-rate effect:** With the supply of money fixed, an increase in the price level increases the demand for money, increases interest rates, and as a result reduces those expenditures (by consumers and business firms) that are sensitive to increased interest rates. A decrease in the price level has the opposite effects.

(3) **Foreign purchases effect:** An increase in the price level (relative to foreign price levels) will reduce U.S. exports because U.S. products are now more expensive for foreigners and expand U.S. imports because foreign products are less expensive for U.S. consumers. As a consequence, net exports will decrease, which means there will be a decrease in the quantity of goods and services demanded in the U.S. economy, as the price level rises. A decrease in the price level (relative to foreign price levels) will have opposite effects.

2. Spending by domestic consumers, businesses, government, and foreign buyers that is independent of changes in the price level are **determinants of aggregate demand**. The amount of changes in aggregate demand involves two components: the amount of the initial change in one of the determinants and a multiplier effect that multiplies the initial change. These determinants are also called aggregate demand shifts because a change in one of them, other things equal, will shift the entire aggregate demand curve. Figure 29.2 shows the shifts. What follows is a description of each of the four major determinants and underlying factors.

a. **Consumer spending** can increase or decrease AD. If the price level is constant, and consumers decide to spend more, then AD will increase; if consumers decide to spend less then AD will decrease. Four factors increase or decrease consumer spending:

- (1) **Consumer wealth:** If the real value of financial assets such as stocks, bond, or real estate increases (minus any liabilities for these assets), then consumers will feel wealthier, spend more, and AD increases. If the real value of financial assets falls, consumers will spend less and AD will decrease.
- (2) **Household borrowing:** If consumers borrow more money, they can increase their consumption spending,

thus increasing AD. Conversely, if consumers cut back on their borrowing for consumption spending, AD decreases. Also, if consumers increase their savings rate to pay off their debt, AD decreases.

(3) *Consumer expectations*: If consumers become more optimistic about the future, they will likely spend more and AD will increase. If consumers expect the future to be worse, they will decrease their spending and AD will decrease.

(4) *Personal taxes*: Cuts in personal taxes increase disposable income and the capacity for consumer spending, thus increasing AD. A rise in personal taxes decreases disposable income, consumer spending, and AD.

**b. Investment spending** can increase or decrease AD. If the price level is constant, and businesses decide to spend more on investment, then AD will increase. If businesses decide to spend less on investment, then AD will decrease. Three factors increase or decrease investment spending.

(1) *Real interest rates*: A decrease in real interest rates will increase the quantity of investment spending, thus increasing AD. An increase in real interest rates will decrease the quantity of investment spending, thus decreasing AD.

(2) *Expected returns*: If businesses expect higher returns on investments in the future, they will likely increase their investment spending today, so AD will increase. If businesses expect lower returns on investments in the future, they will decrease their investment spending today, and AD will decrease. These expected returns are influenced by expectations about future business conditions, the state of technology, the degree of excess capacity (the amount of unused capital goods), and business taxes.

(a) More positive future expectations, more technological progress, less excess capacity, and lower taxes will increase investment spending and thus increase AD.

(b) Less positive future expectations, less technological progress, more excess capacity, and higher taxes will decrease investment spending and thus decrease AD.

**c. Government spending** has a direct effect on AD, assuming that tax collections and interest rates do not change as a result of the spending. More government spending tends to increase AD and less government spending will decrease AD.

**d. Net export spending** can increase or decrease AD. If the price level is constant and net exports (exports minus imports) should increase, then AD will increase. If net exports are negative, then AD will decrease. Two factors explain the increase or decrease in net export spending.

(1) *National income abroad*: An increase in the national income of other nations will increase the demand for all goods and services, including U.S. exports. If U.S. exports increase relative to U.S. imports, then net exports will increase, and so will AD. A decline in national incomes abroad will tend to reduce U.S. net exports and thus reduce AD.

(2) *Exchange rates*: A depreciation in the value of the U.S. dollar means that U.S. imports should decline

because domestic purchasers cannot buy as many imports as they used to buy. U.S. exports should increase because foreigners have more purchasing power to buy U.S. products. These events increase net exports, and thus increase AD. An appreciation in the value of the dollar will decrease net exports, and thus decrease AD.

**3. Aggregate supply** is a curve that shows the total quantity of goods and services that will be produced (supplied) at different price levels. The shape of the aggregate supply curve will differ depending on the time horizon and how quickly input prices and output prices can change.

**a. In the immediate short run, the aggregate supply curve** is horizontal because both input prices and output prices remain fixed. The horizontal shape implies that the total amount of output supplied in the economy depends directly on the amount of spending at the fixed price level.

**b. In the short run, the aggregate supply curve** is upward sloping because input prices are fixed or highly inflexible and output prices are flexible, and thus changes in the price level increase or decrease the real profits of firms. The curve is relatively flat below the full-employment level of output because there is excess capacity and unemployed resources so per-unit production costs stay relatively constant as output expands, but beyond the full-employment level of output, per-unit production costs rise rapidly as output increases because resources are fully employed and efficiency falls.

**c. In the long run, the aggregate supply curve** is vertical at the full-employment level of output for the economy because both input prices and output prices are flexible. Any change in output prices is matched by a change in input prices, so there is no profit incentive for firms to produce more than is possible at full-employment output.

**4. The determinants of aggregate supply** that shift the curve include changes in the prices of inputs for production, changes in productivity, and changes in the legal and institutional environment in the economy, as outlined in Figure 29.5.

**a. A change in input prices** for resources used for production will change aggregate supply in the short run: Lower input prices increase AS and higher input prices decrease AS. These input prices are for both domestic and imported resources.

(1) *Domestic resource prices* include the prices for labor, capital, and natural resources used for production. If any of these input prices decrease, then AS will increase because the per-unit cost of production will decrease. When the prices of these domestic factors of production increase, then AS will decrease.

(2) The *prices of imported resources* are the cost of paying for resources imported from other nations. If the value of the dollar appreciates, then it will cost less to pay for imported resources used for production. As a result, per-unit production costs will decrease, and AS will increase. Conversely, if the value of the dollar depreciates, then it will cost more to import resources, so AS will decrease.

b. As **productivity** improves, per-unit production costs will fall and AS will increase. This outcome occurs because productivity (output divided by input) is the denominator for the formula for per-unit production costs (total input cost divided by productivity). As productivity declines, per-unit production costs will increase, so AS will decrease.

c. Changes in the **legal and institutional environment** for business can affect per-unit production costs and thus AS.

(1) A decrease in **business taxes** is like a reduction in the per-unit cost of production, so it will increase AS. The same effect occurs when there is an increase in **business subsidies**. The raising of taxes or lowering of subsidies for business will increase per-unit production costs and decrease AS.

(2) A decrease in the amount of **government regulation** is similar to a decrease in the per-unit cost of production, so it will increase AS. An increase in government regulation will raise costs, and thus will decrease AS.

5. The **equilibrium real output** and the **equilibrium price level** are at the intersection of the aggregate demand and the aggregate supply curves. If the price level were below equilibrium, then producers would supply less real output than was demanded by purchasers. Competition among buyers would bid up the price level and producers would increase their output, until an equilibrium price level and quantity was reached. If the price level were above equilibrium, then producers would supply more real output than was demanded by purchasers. Competition among sellers would lower the price level and producers would reduce their output, until an equilibrium price level and quantity was reached. The aggregate demand and aggregate supply curves can also **shift to change equilibrium**.

a. An **increase in aggregate demand** would result in an increase in both real domestic output and the price level. An increase in the price level beyond the full-employment level of output is associated with **demand-pull inflation**. A classic example occurred during the late 1960s because of a sizable increase in government spending for domestic programs and the war in Vietnam.

b. A **decrease in aggregate demand** reduces real output and increases cyclical unemployment, but it may not decrease the price level. In 2001, there was a significant decline in investment spending that reduced aggregate demand and led to a fall in real output and a rise in cyclical unemployment. The rate of inflation fell (there was disinflation), but there was no decline in the price level (deflation). The reason the economy experiences a "GDP gap with no deflation" is that the **price level is inflexible downward**. The price level is largely influenced by labor costs, which account for most of the input prices for the production of many goods and services. There are at least five interrelated reasons for this downward inflexibility of the price level.

(1) There is the fear of starting a **price war** in which firms compete with each other on lowering prices regardless of the cost of production. Price wars hurt

business profits, and they make firms reluctant to cut prices for fear of starting one.

(2) Firms are reluctant to change input prices if there are costs related to changing the prices or announcing the change. Such **menu costs** increase the waiting time before businesses make any price changes.

(3) If wages are determined largely by **long-term contracts**, it means that wages cannot be changed in the short run.

(4) **Morale, effort, and productivity** may be affected by changes in wage rates. If current wages are **efficiency wages** that maximize worker effort and morale, employers may be reluctant to lower wages because such changes reduce work effort and productivity.

(5) The **minimum wage** puts a legal floor on the wages for the least skilled workers in the economy.

c. A **decrease in aggregate supply** means there will be a decrease in real domestic output (economic growth) and employment along with a rise in the price level, or **cost-push inflation**. This situation occurred in the mid-1970s when the price of oil substantially increased and significantly increased the cost of production for many goods and services and reduced productivity.

d. An **increase in aggregate supply** arising from an increase in productivity has the beneficial effects of improving real domestic output and employment while maintaining a stable price level. Between 1996 and 2000, the economy experienced strong economic growth, full employment and very low inflation. These outcomes occurred because of an increase in aggregate demand in combination with an increase in aggregate supply from an increase in productivity due to technological change.

6. (Last Word). In the mid-1970s, sizable increases in the price of oil increased production costs and reduced productivity, thus decreasing aggregate supply. These changes led to cost-push inflation, higher unemployment, and a decline in real output. More recent increases in oil prices during 2000 and again in 2005 did not have the adverse effects on the U.S. economy as was the case in the past. Although there were many reasons for this switch, perhaps most important was that oil was not as significant a resource for production in the U.S. economy as it had been in the past. The U.S. economy was about 33 percent less sensitive to fluctuations in oil prices than in the early 1980s.

#### ■ HINTS AND TIPS

1. Aggregate demand and supply are the tools used to explain what determines the economy's real output and price level. These tools, however, are **different from the demand and supply** used in Chapter 3 to explain what determines the output and price of a **particular** product. Instead of thinking about the quantity of a **particular** good or service demanded or supplied, it is necessary to think about the total or **aggregate** quantity of all final goods and services demanded (purchased) and supplied (produced). You will have no difficulty with the way demand

and supply are used in this chapter once you switch from thinking about a *particular* good or service and its price to the *aggregate* of all final goods and services and their average price.

2. Make a chart showing each of the **determinants** of aggregate demand (see Figure 29.2) and aggregate supply (Figure 29.5). In the chart, state the direction of the change in each determinant, and then state the likely resulting change in AD or AS. For example, if consumer wealth *increases*, then AD *increases*. Or, if imported prices for resources *increase*, then AS *decreases*. This simple chart can help you quickly see in one quick glance all the possible changes in determinants and their likely effects on AD or AS. Problem 2 in this *Study Guide* will give you an application for this chart.

3. Make sure you know the difference between a **movement** along an existing aggregate demand or supply curve and a **shift** in (increase or decrease in) an aggregate demand or supply curve. Figures 29.7 and 29.9 illustrate the distinction.

4. Unlike the aggregate demand curve, the shape of the aggregate supply curve actually varies based on time horizon and how quickly input prices and output prices change. In the immediate short run, input prices and output prices are fixed, so AS is horizontal at a particular price level (Figure 29.3). In the short run, input prices are fixed, but output prices can change, so the AS is upsloping around the full-employment level of output (Figure 29.4). In the long run, input and output prices are flexible, but the economy can only produce at the full-employment level of output, so AS is vertical (Figure 29.5).

#### ■ IMPORTANT TERMS

aggregate demand– aggregate supply (AD–AS) model	short-run aggregate supply curve
aggregate demand (AD)	long-run aggregate supply curve
real-balances effect	determinants of aggregate supply
interest-rate effect	productivity
foreign purchases effect	equilibrium price level
determinants of aggregate demand	equilibrium real output
aggregate supply (AS)	efficiency wages
immediate-short-run aggregate supply curve	menu costs

#### SELF-TEST

#### ■ FILL-IN QUESTIONS

1. Aggregate demand and aggregate supply together determine the equilibrium real domestic (price, output) \_\_\_\_\_ and the equilibrium \_\_\_\_\_ level.

2. The aggregate demand curve shows the quantity of goods and services that will be (supplied, demanded) \_\_\_\_\_ or purchased at various price levels.

For aggregate demand, the relationship between real output and the price level is (positive, negative) \_\_\_\_\_.

3. The aggregate demand curve slopes (upward, downward) \_\_\_\_\_ because of the (real-balances, consumption) \_\_\_\_\_ effect, the (profit, interest) \_\_\_\_\_ rate effect, and the (domestic, foreign) \_\_\_\_\_ purchases effect.

4. For the aggregate demand curve, an increase in the price level (increases, decreases) \_\_\_\_\_ the quantity of real domestic output demanded, whereas a decrease in the price level \_\_\_\_\_ the quantity of real domestic output demanded, assuming other things equal.

5. For the aggregate demand curve, when the price level changes, there is a (movement along, change in) \_\_\_\_\_ the curve. When the entire aggregate demand curve shifts, there is a change in (the quantity of real output demanded, aggregate demand) \_\_\_\_\_.

6. List the four factors that may change consumer spending, and thus shift aggregate demand:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

7. List two major factors that may change investment spending, and thus shift aggregate demand:

- \_\_\_\_\_
- \_\_\_\_\_

8. If government spending increases, then aggregate demand is likely to (increase, decrease) \_\_\_\_\_, but if government spending decreases, it is likely to \_\_\_\_\_.

9. If there is an increase in national income abroad, then net exports spending is most likely to (increase, decrease) \_\_\_\_\_.

\_\_\_\_\_ and if there is a depreciation of the value of the U.S. dollar, then net exports are likely to \_\_\_\_\_.

When net exports increase, aggregate demand will (increase, decrease) \_\_\_\_\_.

10. The aggregate supply curve shows the quantity of goods and services that will be (demanded, supplied) \_\_\_\_\_ or produced at various price levels.

The shape of the immediate-short-run aggregate supply curve is (vertical, horizontal, upsloping) \_\_\_\_\_, while the shape of the short-run aggregate supply curve \_\_\_\_\_.

is \_\_\_\_\_, and the shape of the long-run aggregate supply curve is \_\_\_\_\_.

11. For the short-run aggregate supply curve, as the price level increases, real domestic output (increases, decreases) \_\_\_\_\_, and as the price level decreases, real domestic output \_\_\_\_\_. The relationship between the price level and real domestic output supplied is (positive, negative) \_\_\_\_\_.

12. Aggregate supply shifts may result from:

a. a change in input prices caused by a change in

(1) \_\_\_\_\_

(2) \_\_\_\_\_

b. a change in (consumption, productivity) \_\_\_\_\_

c. a change in the legal and institutional environment caused by a change in

(1) \_\_\_\_\_

(2) \_\_\_\_\_

13. The equilibrium real domestic output and price level are found at the (zero values, intersection) \_\_\_\_\_ of the aggregate demand and the aggregate supply curves. At this price level, the aggregate quantity of goods and services demanded is (greater than, less than, equal to) \_\_\_\_\_ the aggregate quantity of goods and services supplied. And at this real domestic output, the prices producers are willing to (pay, accept) \_\_\_\_\_ are equal to the prices buyers are willing to \_\_\_\_\_.

14. If the price level were below equilibrium, the quantity of real domestic output supplied would be (greater than, less than) \_\_\_\_\_ the quantity of real domestic output demanded. As a result competition among buyers eliminates the (surplus, shortage) \_\_\_\_\_ and bids up the price level.

15. If the price level were above equilibrium, the quantity of real domestic output supplied would be (greater than, less than) \_\_\_\_\_ the quantity of real domestic output demanded. As a result competition among producers eliminates the (surplus, shortage) \_\_\_\_\_ and lowers the price level.

16. An increase in aggregate demand will (increase, decrease) \_\_\_\_\_ real domestic output and will \_\_\_\_\_ the price level. If the economy is initially operating at its full-employment level of output, and aggregate demand increases, it will produce (demand-pull, cost-push) \_\_\_\_\_ inflation.

17. If aggregate demand decreases, then real domestic output will (increase, decrease) \_\_\_\_\_. Such

a change often produces economic conditions called (inflation, recession) \_\_\_\_\_ and unemployment (rises, falls) \_\_\_\_\_.

18. When aggregate demand decreases, the price level is often inflexible (upward, downward) \_\_\_\_\_. This inflexibility occurs because of wage (contracts, flexibility) \_\_\_\_\_. workers are paid (efficiency, inefficiency) \_\_\_\_\_ wages, there is a (maximum, minimum) \_\_\_\_\_ wage, businesses experience menu (benefits, costs) \_\_\_\_\_, and there is fear of (price, wage) \_\_\_\_\_ wars.

19. A decrease in aggregate supply will (increase, decrease) \_\_\_\_\_ real output and \_\_\_\_\_ the price level. Such a change in aggregate supply contributes to (demand-pull, cost-push) \_\_\_\_\_ inflation.

20. An increase in aggregate supply will (increase, decrease) \_\_\_\_\_ real domestic output and \_\_\_\_\_ the price level. If aggregate demand increased, the price level would (increase, decrease) \_\_\_\_\_, but a simultaneous increase in aggregate supply (reinforces, offsets) \_\_\_\_\_ this change and helps keep the price level stable.

#### TRUE-FALSE QUESTIONS

Circle T if the statement is true, F if it is false.

1. Aggregate demand reflects a positive relationship between the price level and the amount of real output demanded. T F

2. The explanation as to why the aggregate demand curve slopes downward is the same as the explanation as to why the demand curve for a single product slopes downward. T F

3. A fall in the price level increases the real value of financial assets with fixed money values and, as a result, increases spending by the holders of these assets. T F

4. Given a fixed supply of money, a rise in the price level increases the demand for money in the economy and drives interest rates downward. T F

5. A rise in the price level of an economy (relative to foreign price levels) tends to increase that economy's exports and to reduce its imports of goods and services. T F

6. A movement along a fixed aggregate demand curve is the same as a shift in aggregate demand. T F

7. Changes in aggregate demand involve a change in initial spending from one of the determinants and a multiplier effect on spending. T F



8. A change in aggregate demand is caused by a change in the price level, *other things equal*. T F
9. The real-balances effect is one of the determinants of aggregate demand. T F
10. A large decline in household borrowing will increase consumption spending and aggregate demand. T F
11. A fall in excess capacity, or unused existing capital goods, will retard the demand for new capital goods and therefore reduce aggregate demand. T F
12. Appreciation of the dollar relative to foreign currencies will tend to increase net exports and aggregate demand. T F
13. The immediate short-run aggregate supply curve is horizontal and the short-run aggregate supply curve is upsloping. T F
14. The aggregate supply curve is vertical in the long run at the full-employment level of output. T F
15. When the determinants of short-run aggregate supply change, they alter the per-unit production cost at each price level and thereby aggregate supply. T F
16. Productivity is a measure of real output per unit of input. T F
17. Per-unit production cost is determined by dividing total input cost by units of output. T F
18. At the equilibrium price level, the real domestic output purchased is equal to the real domestic output produced. T F
19. An increase in aggregate demand will increase both the price level and the real domestic output. T F
20. An increase in aggregate demand is associated with cost-push inflation. T F
21. The greater the increase in the price level that results from an increase in aggregate demand, the greater will be the increase in the equilibrium real GDP. T F
22. A significant decrease in aggregate demand can result in recession and cyclical unemployment. T F
23. Fear of price wars tends to make the price level more flexible rather than less flexible. T F
24. A decrease in aggregate supply decreases the equilibrium real domestic output and increases the price level, resulting in cost-push inflation. T F
25. An increase in aggregate supply driven by productivity increases can offset the inflationary pressures from an increase in aggregate demand. T F

#### ■ MULTIPLE-CHOICE QUESTIONS

Circle the letter that corresponds to the best answer.

1. The aggregate demand curve is the relationship between the

- (a) price level and what producers will supply
  - (b) price level and the real domestic output purchased
  - (c) price level and the real domestic output produced
  - (d) real domestic output purchased and the real domestic output produced
2. When the price level rises,
    - (a) the demand for money and interest rates rises
    - (b) spending that is sensitive to interest-rate changes increases
    - (c) holders of financial assets with fixed money values increase their spending
    - (d) holders of financial assets with fixed money values have more purchasing power
  3. One explanation for the downward slope of the aggregate demand curve is that a change in the price level results in
    - (a) a multiplier effect
    - (b) an income effect
    - (c) a substitution effect
    - (d) a foreign purchases effect
  4. A sharp decline in the real value of stock prices, which is independent of a change in the price level, would best be an example of
    - (a) the interest-rate effect
    - (b) the foreign purchases effect
    - (c) a change in household borrowing
    - (d) a change in real value of consumer wealth
  5. The aggregate demand curve will be increased by
    - (a) a decrease in the price level
    - (b) an increase in the price level
    - (c) a depreciation in the value of the U.S. dollar
    - (d) an increase in the excess capacity of factories
  6. The aggregate supply curve is the relationship between the
    - (a) price level and the real domestic output purchased
    - (b) price level and the real domestic output produced
    - (c) price level that producers are willing to accept and the price level purchasers are willing to pay
    - (d) real domestic output purchased and the real domestic output produced
  7. The short-run aggregate supply curve assumes that
    - (a) nominal wages respond to changes in the price level
    - (b) nominal wages do not respond to changes in the price level
    - (c) the economy is operating at full-employment output
    - (d) the economy is operating at less than full-employment output
  8. In the long run, the aggregate supply curve is
    - (a) upsloping
    - (b) downsloping
    - (c) vertical
    - (d) horizontal

9. If the prices of imported resources increase, then this event would most likely

- (a) decrease aggregate supply
- (b) increase aggregate supply
- (c) increase aggregate demand
- (d) decrease aggregate demand

Suppose that real domestic output in an economy is 50 units, the quantity of inputs is 10, and the price of each input is \$2. Answer Questions 10, 11, 12, and 13 on the basis of this information.

10. The level of productivity in this economy is

- (a) 5
- (b) 4
- (c) 3
- (d) 2

11. The per-unit cost of production is

- (a) \$0.40
- (b) \$0.50
- (c) \$2.50
- (d) \$3.50

12. If productivity increased such that 60 units are now produced with the quantity of inputs still equal to 10, then per-unit production costs would

- (a) remain unchanged and aggregate supply would remain unchanged
- (b) increase and aggregate supply would decrease
- (c) decrease and aggregate supply would increase
- (d) decrease and aggregate supply would decrease

13. All else equal, if the price of each input increased from \$2 to \$4, productivity would

- (a) decrease from \$4 to \$2 and aggregate supply would decrease
- (b) decrease from \$5 to \$3 and aggregate supply would decrease
- (c) decrease from \$4 to \$2 and aggregate supply would increase
- (d) remain unchanged and aggregate supply would decrease

14. If Congress passed much stricter laws to control the air pollution from businesses, this action would tend to

- (a) increase per-unit production costs and shift the aggregate supply curve to the right
- (b) increase per-unit production costs and shift the

16. If at a particular price level, real domestic output from producers is less than real domestic output desired by buyers, there will be a

- (a) surplus and the price level will rise
- (b) surplus and the price level will fall
- (c) shortage and the price level will rise
- (d) shortage and the price level will fall

Answer Questions 17, 18, and 19 on the basis of the following aggregate demand-aggregate supply schedule for a hypothetical economy.

Real domestic output demanded (in billions)	Price level	Real domestic output supplied (in billions)
\$1500	175	\$4500
\$2000	150	\$4000
\$2500	125	\$3500
\$3000	100	\$3000
\$3500	75	\$2500
\$4000	50	\$2000

17. The equilibrium price level and quantity of real domestic output will be

- (a) 100 and \$2500
- (b) 100 and \$3000
- (c) 125 and \$3500
- (d) 150 and \$4000

18. If the quantity of real domestic output demanded increased by \$2000 at each price level, the new equilibrium price level and quantity of real domestic output would be

- (a) 175 and \$4000
- (b) 150 and \$4000
- (c) 125 and \$3500
- (d) 100 and \$3000

19. Using the original data from the table, if the quantity of real domestic output demanded increased by \$1500 and the quantity of real domestic output supplied increased by \$500 at each price level, the new equilibrium price level and quantity of real domestic output would be

- (a) 175 and \$4000
- (b) 150 and \$4500
- (c) 125 and \$4000
- (d) 100 and \$3500



22. Aggregate demand decreases and real output falls but the price level remains the same. Which factor most likely contributes to downward price inflexibility?

- (a) an increase in aggregate supply
- (b) the foreign purchases effect
- (c) lower interest rates
- (d) efficiency wages

23. Fear of price wars, menu costs, and wage contracts are associated with

- (a) a price level that is inflexible upward
- (b) a price level that is inflexible downward
- (c) a domestic output that cannot be increased
- (d) a domestic output that cannot be decreased

24. If there were cost-push inflation,

- (a) both the real domestic output and the price level would decrease
- (b) the real domestic output would increase and rises in the price level would become smaller
- (c) the real domestic output would decrease and the price level would rise
- (d) both the real domestic output and rises in the price level would become greater

25. An increase in aggregate supply will

- (a) increase the price level and real domestic output
- (b) decrease the price level and real domestic output
- (c) decrease the price level and increase the real domestic output
- (d) decrease the price level and have no effect on real domestic output

# PROBLEMS

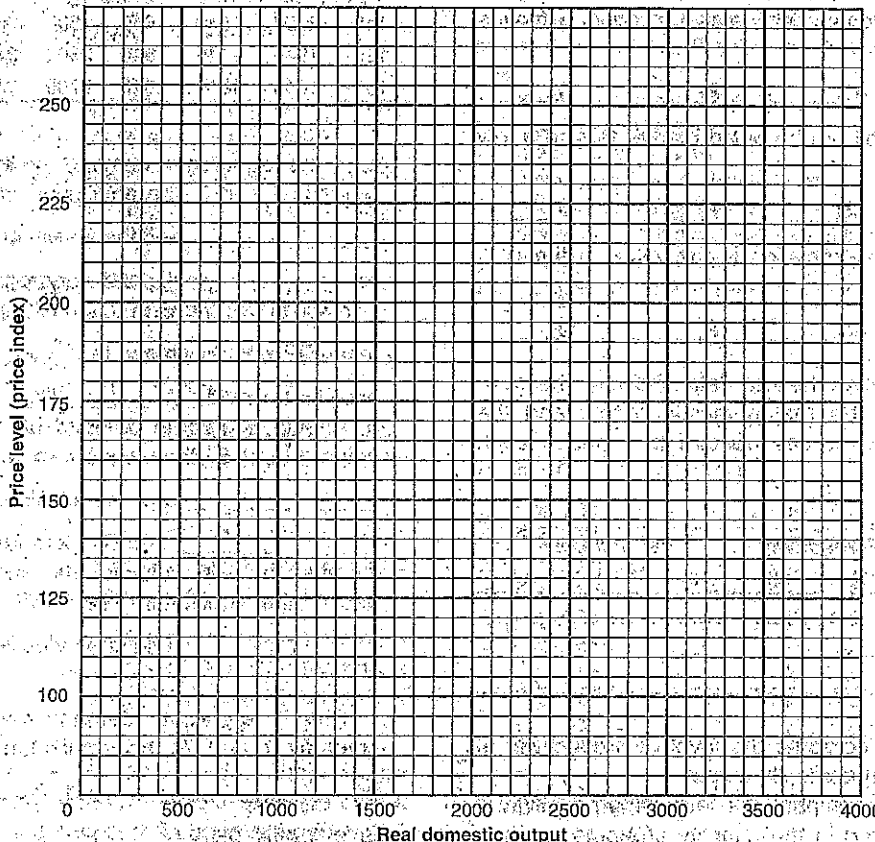
1. Following is an aggregate supply schedule.

Price level	Real domestic output supplied
250	2100
225	2000
200	1900
175	1700
150	1400
125	1000
100	900

a. Plot this aggregate supply schedule on the graph below.

b. The following table has three aggregate demand schedules.

Price level	Real domestic output demanded			
(1)	(2)	(3)	(4)	
250	1400	1900	500	
225	1500	2000	600	
200	1600	2100	700	
175	1700	2200	800	
150	1800	2300	900	
125	1900	2400	1000	
100	2000	2500	1100	



(1) On the graph, plot the aggregate demand curve shown in columns 1 and 2; label this curve  $AD_1$ . At this level of aggregate demand, the equilibrium real domestic output is \_\_\_\_\_ and the equilibrium price level is \_\_\_\_\_.

(2) On the same graph, plot the aggregate demand curve shown in columns 1 and 3; label this curve  $AD_2$ . The equilibrium real domestic output is \_\_\_\_\_ and the equilibrium price level is \_\_\_\_\_.

(3) On the same graph, plot the aggregate demand curve shown in columns 1 and 4; label it  $AD_3$ . The equilibrium real domestic output is \_\_\_\_\_ and the equilibrium price level is \_\_\_\_\_.

2. In the following list, what will most likely happen as a result of each event to (1) aggregate demand ( $AD$ ); (2) aggregate supply ( $AS$ ); (3) the equilibrium price level ( $P$ ); and (4) equilibrium real domestic output ( $Q$ )? Assume that all other things remain constant when the event occurs and that the aggregate supply curve is a short-run one. Use the following symbols to indicate the expected effects:  $I$  = increase,  $D$  = decrease,  $S$  = remains the same, and  $U$  = uncertain.

a. A decrease in labor productivity.

$AD$  \_\_\_\_\_  $AS$  \_\_\_\_\_  $P$  \_\_\_\_\_  $Q$  \_\_\_\_\_

b. A fall in the interest rate for business loans.

$AD$  \_\_\_\_\_  $AS$  \_\_\_\_\_  $P$  \_\_\_\_\_  $Q$  \_\_\_\_\_

c. Consumer incomes decline as the economy moves into a recession.

$AD$  \_\_\_\_\_  $AS$  \_\_\_\_\_  $P$  \_\_\_\_\_  $Q$  \_\_\_\_\_

d. The price of oil on the world market falls to a low level.

$AD$  \_\_\_\_\_  $AS$  \_\_\_\_\_  $P$  \_\_\_\_\_  $Q$  \_\_\_\_\_

e. There is an appreciation in the value of the U.S. dollar.

$AD$  \_\_\_\_\_  $AS$  \_\_\_\_\_  $P$  \_\_\_\_\_  $Q$  \_\_\_\_\_

3. Following are hypothetical data showing the relationships between the real domestic output and the quantity of input resources needed to produce each level of output.

Output	Input	Productivity		Per unit cost		
		(1)	(2)	(3)	(4)	(5)
2500	500	_____	_____	_____	_____	_____
2000	400	_____	_____	_____	_____	_____
1500	300	_____	_____	_____	_____	_____

a. In column 1, compute the level of productivity at each level of real domestic output.

to produce each level of output.

c. In column 3, compute the per-unit production cost at each level of output if each unit of input costs \$1 given the level of productivity in column 1.

d. In column 4, compute the new per-unit production cost at each level of output if each unit of input costs \$15, given that there has been a doubling in the required quantity of inputs to produce each level of output as shown in column 2. If this situation occurs, will aggregate supply (decrease, increase, stay the same)? \_\_\_\_\_

e. In column 5, compute the new per-unit production cost at each level of output, given that input price is now \$10 instead of \$15 but the level of productivity stays the same as it was originally shown in column 1. What will happen to the aggregate supply curve if this situation occurs? \_\_\_\_\_

4. Columns 1 and 2 in the table that follows are the aggregate supply schedule of an economy.

(1) Price level	(2) Real GDP	(3) $AD_1$	(4) $AD_2$	(5) $AD_3$	(6) $AD_4$	(7) $AD_5$	(8) $AD_6$
260	2540	940	1140	1900	2000	2090	2390
240	2490	1040	1240	2000	2100	2190	2490
220	2430	1140	1340	2100	2200	2290	2590
200	2390	1240	1440	2200	2300	2390	2690
190	2350	1390	1590	2250	2350	2540	2740
180	2300	1440	1640	2300	2400	2590	2890
160	2200	1540	1740	2400	2500	2690	2990
140	2090	1640	1840	2500	2600	2790	3090
120	1940	1740	1940	2600	2700	2890	3190
100	1840	1840	2040	2700	2800	2990	3290

a. If the aggregate demand in the economy were that shown in columns 1 and 3, the equilibrium real GDP would be \_\_\_\_\_ and the equilibrium price level would be \_\_\_\_\_. If aggregate demand should increase to that shown in columns 1 and 4, the equilibrium real GDP would increase to \_\_\_\_\_ and the price level would \_\_\_\_\_.

b. Should aggregate demand be that shown in columns 1 and 5, the equilibrium real GDP would be \_\_\_\_\_ and the equilibrium price would be \_\_\_\_\_. If aggregate demand should increase by 100 units to that shown in columns 1 and 6, the equilibrium real GDP would increase to \_\_\_\_\_ and the price level would rise to \_\_\_\_\_.

c. And if aggregate demand were that shown in columns 1 and 7, the equilibrium real GDP would be \_\_\_\_\_ and the price level would be \_\_\_\_\_.

demand increased to that shown in columns 1 and 8, the equilibrium real GDP would \_\_\_\_\_ and the price level would rise to \_\_\_\_\_.

### ■ SHORT ANSWER AND ESSAY QUESTIONS

1. What is the aggregate demand curve? Draw a graph and explain its features.
2. Use the interest-rate effect, the real-balances effect, and the foreign purchases effect to explain the relationship between the price level and the real domestic output demanded.
3. Explain the wealth effect and its impact on purchasing power. Give an example.
4. What roles do the expectations of consumers and businesses play in influencing aggregate demand?
5. How is aggregate demand changed by changes in net export spending? What factors cause changes in net export spending?
6. Explain the shape of the immediate-short-run aggregate supply curve. How do time and prices affect its shape?
7. Why does the short-run aggregate supply curve slope upward? Why is it relatively flat at outputs below the full-employment output level and relatively steep at outputs above it?
8. Why is the aggregate supply curve in the long run a vertical curve? Why is output not affected by the price level in the long run?
9. Describe how changes in the international economy influence aggregate demand or aggregate supply.
10. How does an increase or decrease in per-unit production costs change aggregate supply? Give examples.
11. How does the legal and institutional environment affect aggregate supply? Give examples.
12. Explain how a change in business taxes affects aggregate demand and aggregate supply.
13. What real domestic output is the equilibrium real domestic output? What will happen to real output if the price

17. Give reasons why prices in the economy tend to be inflexible in a downward direction.
18. What are the effects on the real domestic output and the price level of a decrease in aggregate supply?
19. Describe and graph an increase in aggregate supply and its effects on the price level and real output.
20. How did the economy simultaneously achieve full employment, economic growth, and price stability between 1996 and 2000?

### ANSWERS

#### Chapter 29 Aggregate Demand and Aggregate Supply

##### FILL-IN QUESTIONS

1. output, price
2. demanded, negative
3. downward, real-balances, interest, foreign
4. decreases, increases
5. movement along, aggregate demand
6. a. consumer wealth; b. consumer expectations; c. household borrowing; d. personal taxes (any order for a-d)
7. a. interest rates; b. expected returns on investment (either order for a-b)
8. increase, decrease
9. increase, increase, increase
10. supplied, horizontal, upsloping, vertical
11. increases, decreases, positive
12. a. (1) domestic resource availability, (2) prices of imported resources (any order for 1-2); b. productivity; c. (1) business taxes and subsidies, (2) government regulation (any order for 1-2)
13. intersection, equal to, accept, pay
14. less than, shortage
15. greater than, surplus
16. increase, increase, demand-pull
17. decrease, recession, rises
18. downward, contracts, efficiency, minimum, costs, price
19. decrease, increase, cost-push
20. increase, decrease, increase, offsets

## MULTIPLE-CHOICE QUESTIONS

1. b, p. 584
2. a, p. 585
3. d, p. 585
4. d, p. 586
5. c, pp. 586-587
6. b, p. 588
7. b, p. 589
8. c, p. 590
9. a, p. 592
10. a, p. 593
11. a, p. 593
12. c, p. 593
13. d, p. 593
14. b, pp. 593-594
15. c, p. 593
16. c, pp. 594-595
17. b, pp. 594-595
18. b, pp. 595-596
19. c, p. 598
20. d, pp. 594-596
21. c, p. 596
22. d, p. 597
23. b, p. 597
24. c, pp. 597-598
25. c, pp. 598, 600

## PROBLEMS

1. b. (1) 1700, 175, (2) 2000, 225, (3) 1000, 125
2. a. S, D, I, D; b. I, S, I; c. D, S, D, D; d. I, I, U, I; e. D, I, D, U
3. a. 5, 5, 5; b. 2.5, 2.5, 2.5; c. \$3, \$3, \$3; d. \$6, \$6, \$6; decrease; e. \$2, \$2, \$2, it will increase
4. a. 1840, 100, 1940, 120; b. 2300, 180, 2350, 190; c. 2390, 200, 2490, 240

## SHORT ANSWER AND ESSAY QUESTIONS

1. p. 584
2. pp. 584-585
3. p. 586
4. pp. 586-587
5. p. 587
6. pp. 588-589
7. pp. 589-590
8. pp. 591-592
9. p. 587, 592
10. pp. 591-593
11. p. 593
12. pp. 593-594
13. pp. 594-595
14. pp. 594-595
15. pp. 595-596
16. pp. 596-597
17. p. 597
18. pp. 597-598
19. pp. 598, 600
20. pp. 598, 600

# The Relationship of the Aggregate Demand Curve to the Aggregate Expenditure Model

This appendix explains how the aggregate expenditures (AE) model that you learned about in Chapter 28 is related to the aggregate demand (AD) curve that was presented in Chapter 29. There are two short sections to this appendix. The first one focuses on the derivation of the aggregate demand curve from the AE model. The second one explains how shifts in aggregate demand are related to shifts in aggregate expenditures.

Although the aggregate expenditures model is a fixed-price-level model and the aggregate demand–aggregate supply model is a variable-price-level model, there is a close relationship between the two models. The important thing to understand is that prices can be fixed or constant at different levels. The AD curve can be derived from the aggregate expenditures model by letting the price level be constant at different levels. For example, the lower (the higher) the level at which prices are constant in the aggregate expenditures model, the larger (the smaller) will be the equilibrium real GDP in that model of the economy. Various output–price-level combinations can be traced to derive an AD curve that slopes downward, as shown in Figure 1 in the text.

The aggregate demand curve can shift (increase or decrease) because of a change in the nonprice-level determinants of aggregate demand. The determinants include changes in factors affecting consumer, investment, government, and net export spending. These determinants are similar to the components of the aggregate expenditures model. It is easy to show the relationship between the shifts in the two models. A change in spending will cause a shift (upward or downward) in the aggregate expenditures schedule as shown in Figure 2 in the text. The initial change in spending when multiplied by the multiplier would be equal to the size of the horizontal shift in AD, assuming a constant price level.

## CHECKLIST

When you have studied this appendix you should be able to

- ☐ Contrast the aggregate expenditures and the aggregate demand–aggregate supply models by comparing the variability of the price level and real GDP.
- ☐ Use a graph to derive the aggregate demand curve from the aggregate expenditures model.
- ☐ Explain the effect of a change in a determinant of aggregate demand on aggregate expenditures.
- ☐ Use a graph to show the relationship between a shift in aggregate expenditures and a shift in aggregate demand.

☐ Discuss how the initial change in spending and the multiplier effect influence the size of the shift in aggregate demand.

## APPENDIX OUTLINE

1. This appendix introduces the **aggregate demand–aggregate supply model** of the economy to explain why real domestic output and the price level fluctuate. This model has an advantage over the aggregate expenditures model because it allows the price level to vary (rise and fall) rather than be constant or fixed as in the aggregate expenditures model.
2. The aggregate demand curve can be derived from the intersections of the aggregate expenditures curves and the 45-degree curve. As the price level falls, the aggregate expenditures curve shifts upward and the equilibrium real GDP increases, but as the price level rises, the aggregate expenditures curve shifts downward and the equilibrium real GDP decreases. The inverse relationship between the price level and equilibrium real GDP is the aggregate demand curve. Note that for the aggregate expenditures model,
  - a. changes in real balances (wealth) increase or decrease the consumption schedule;
  - b. changes in the interest rate increase or decrease the investment schedule; and
  - c. changes in imports or exports affect net exports, which can increase or decrease the net export schedule.
3. If the price level is constant, any change in nonprice-level determinants of consumption and planned investment that shifts the aggregate expenditures curve upward will increase the equilibrium real GDP and shift the AD curve to the right by an amount equal to the initial increase in aggregate expenditures times the multiplier. Conversely, any change in nonprice-level determinants of consumption and planned investment that shifts the aggregate expenditures curve downward will decrease the equilibrium real GDP and shift the AD curve to the left by an amount equal to the initial decrease in aggregate expenditures times the multiplier.

## HINTS AND TIPS

1. Figure 1 is worth extra study to see the relationship between the quantity (real domestic output) and the price level in both models. The upper panel shows the aggregate

expenditures model with aggregate expenditures on the vertical axis and quantity on the horizontal axis. The lower panel shows the aggregate demand model with the price level on the vertical axis and quantity on the horizontal axis. Thus the horizontal axes in both graphs are the same and directly related. The connection between the price levels in each graph is more indirect but they are related nevertheless as shown in Figure 1.

2. Figure 2 shows how shifts are accounted for in each model. A shift upward in aggregate expenditures is the same as a shift outward in aggregate demand. The magnitude of the change in quantity will depend on the multiplier effect, but in both models quantity increases by the same amount.

### ■ IMPORTANT TERMS

aggregate demand  
determinants of  
aggregate demand

aggregate  
expenditures  
schedule  
multiplier

### SELF-TEST

#### ■ FILL-IN QUESTIONS

1. In the aggregate demand–aggregate supply model, the price level is (fixed, variable) \_\_\_\_\_ but in the aggregate expenditures model, the price level is \_\_\_\_\_.

2. In the aggregate expenditures model, a lower price level would (raise, lower) \_\_\_\_\_ the consumption, investment, and aggregate expenditures curves, and the equilibrium level of real GDP would (rise, fall) \_\_\_\_\_.

3. In the aggregate expenditures model, a higher price level would (raise, lower) \_\_\_\_\_ the consumption, investment, and aggregate expenditures curves, and the equilibrium level of real GDP would (rise, fall) \_\_\_\_\_.

4. This relationship between the price level and equilibrium real GDP in the aggregate expenditures model is (direct, inverse) \_\_\_\_\_ and can be used to derive the aggregate (demand, supply) \_\_\_\_\_ curve.

5. If the price level were constant, an increase in the aggregate expenditures curve would shift the aggregate demand curve to the (right, left) \_\_\_\_\_ by an amount equal to the upward shift in aggregate expenditures times the (interest rate, multiplier) \_\_\_\_\_. A decrease in the aggregate expenditures curve would shift the aggregate demand curve to the (right, left)

\_\_\_\_\_ by an amount equal to the (upward, downward) \_\_\_\_\_ shift in aggregate expenditures times the (interest rate, multiplier) \_\_\_\_\_.

### ■ TRUE–FALSE QUESTIONS

Circle *T* if the statement is true, *F* if it is false.

1. Both the graph of the aggregate demand curve and the aggregate expenditures model show the price level on the vertical axis. T F

2. The higher the price level, the smaller the real balances of consumers and the lower the aggregate expenditures schedule. T F

3. An increase in the price level will shift the aggregate expenditures schedule upward. T F

4. An increase in investment spending will shift the aggregate expenditures curve upward and the aggregate demand curve leftward. T F

5. A shift in the aggregate demand curve is equal to the initial change in spending times the multiplier. T F

### ■ MULTIPLE-CHOICE QUESTIONS

Circle the letter that corresponds to the best answer.

1. If the price level in the aggregate expenditures model were lower, the consumption and aggregate expenditures curves would be

- (a) lower, and the equilibrium real GDP would be smaller.
- (b) lower, and the equilibrium real GDP would be larger.
- (c) higher, and the equilibrium real GDP would be larger.
- (d) higher, and the equilibrium real GDP would be smaller.

2. In the aggregate expenditures model, a decrease in the price level, other things held constant, will shift the

- (a) consumption, investment, and net exports curve downward.
- (b) consumption, investment, and net exports curve upward.
- (c) consumption and investment curves upward, but the net exports curve downward.
- (d) consumption and net export curves upward, but the investment curve downward.

3. An increase in investment spending will

- (a) increase aggregate expenditures and increase aggregate demand.
- (b) decrease aggregate expenditures and decrease aggregate demand.
- (c) increase aggregate expenditures and decrease aggregate demand.
- (d) decrease aggregate expenditures and increase aggregate demand.



4. A decrease in net export spending will shift the
- aggregate expenditures schedule upward and the aggregate demand curve rightward
  - aggregate expenditures schedule upward and the aggregate demand curve leftward
  - aggregate expenditures schedule downward and the aggregate demand curve rightward
  - aggregate expenditures schedule downward and the aggregate demand curve leftward

5. An increase in aggregate expenditures shifts the aggregate demand curve to the

- right by the amount of the increase in aggregate expenditures
- right by the amount of the increase in aggregate expenditures times the multiplier
- left by the amount of the increase in aggregate expenditures
- left by the amount of the increase in aggregate expenditures times the multiplier

#### PROBLEMS

1. Column 1 of the following table shows the real GDP an economy might produce.

(1) Real GDP	(2) AE <sub>1.20</sub>	(3) AE <sub>1.00</sub>	(4) AE <sub>0.80</sub>
\$2100	\$2110	\$2130	\$2150
2200	2200	2220	2240
2300	2290	2310	2330
2400	2380	2400	2420
2500	2470	2490	2510
2600	2560	2580	2600

a. If the price level in this economy were \$1.20, the aggregate expenditures (AE) at each real GDP would be those shown in column 2 and the equilibrium real

GDP would be \$ \_\_\_\_\_.

b. If the price level were \$1.00, the aggregate expenditures at each real GDP would be those shown in column 3 and the equilibrium real GDP would be

\$ \_\_\_\_\_.

c. If the price level were \$0.80, the aggregate expenditures at each real GDP would be those shown in column 4 and the equilibrium real GDP would be

\$ \_\_\_\_\_.

d. Show in the following schedule the equilibrium real GDP at each of the three price levels:

Price level	Equilibrium real GDP
\$1.20	\$ _____
1.00	_____
0.80	_____

(1) This schedule is the aggregate (demand, supply) \_\_\_\_\_ schedule.

(2) The equilibrium real GDP is (directly, inversely) \_\_\_\_\_ related to the price level.

#### SHORT ANSWER AND ESSAY QUESTIONS

1. What do the horizontal axes measure in a graph of the aggregate expenditures model and the aggregate demand curve?

2. Why is there an inverse relationship between aggregate expenditures and the price level? Explain, using real balance, the interest rate, and foreign purchases.

3. Describe how the aggregate demand curve can be derived from the aggregate expenditures model.

4. What is the effect of an increase in aggregate expenditures on the aggregate demand curve? Explain in words and with a graph.

5. What role does the multiplier play in shifting aggregate expenditures and aggregate demand?

#### ANSWERS

##### Appendix to Chapter 29 The Relationship of the Aggregate Demand Curve to the Aggregate Expenditures Model

#### FILL-IN QUESTIONS

- variable, fixed
- raise, rise
- lower, fall
- inverse, demand
- right, multiplier, left, downward, multiplier

#### TRUE-FALSE QUESTIONS

- F, p. 604
- F, p. 605
- T, p. 605
- F, p. 605

#### MULTIPLE-CHOICE QUESTIONS

- c, p. 604
- a, pp. 605-605
- b, p. 605
- b, p. 604
- d, p. 605

#### PROBLEMS

1. a. 2200; b. 2400; c. 2600; d. 2200, 2400, 2600, (1) aggregate demand, (2) inversely

#### SHORT ANSWER AND ESSAY QUESTIONS

- p. 604
- pp. 604-605
- p. 605
- p. 604
- p. 605

